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proportion was returned on their hands, as unfit for use, through leakage: but, we are told, that out of 32,000 wrought with compressed wood, not a single canteen has failed, though subjected to the nicest scrutiny, and most rigid experiment, performed with the agitation of hot water in every vessel.

Monthly Magazine.

A patent has been granted to Messrs. Peter Moore's, and Co., London, for a Vertical Bond in buildings, &c.

THE English, Flemish, and lock-bonds comprise the different modes by which brick-walls are at present erected; these are distinguished by the manner of connecting the bricks in each distinct course, but the courses themselves are separated by a regular smooth joint. The defect occasioned by this disunion of the courses, is attempted to be remedied by placing bond-timber longitudinally in the walls, but this alternative is attended with evil consequences in the case of fire, for when the bond-timber is destroyed by the violence of the heat, the walls become incapable of bearing their own weight, and fall down; then the flames, increased by an open communication with the free air, spread with a rapidity to the adjoining buildings.

To guard against this calamity, the legislature have provided, that no timber shall be placed in the party-walls within a specified distance of a chimney, and that the walls shall be of a thickness corresponding with the rate of the building. This provision is certainly the most effectual of any yet offered, but it is, and must continue, defective, so long as these walls are suffered to contain a large quantity of combustible matter as part of their substance.

The improvement now offered, consists in uniting the brick-work into one solid mass, by placing bricks vertically in the inside of the wall, either in a direct or varied course, from the foundation to the top of the building; as will more fully appear by the following specification.

In forming the first horizontal course of bricks, in the foundation of a wall of the breadth of fourteen inches or upwards, there is placed in the inside thereof an hard brick in a vertical or perpendicular position, with its edge toward the front of the wall, at the distance of four and an half inches from the left-hand end of the same; there are also placed vertical bricks at the distance of six feet from the centre of each other in succession throughout the whole length of the wall. In forming the second course, there is placed in succession a vertical brick at the distance of two feet from the centre thereof, to the centre of the vertical brick placed in the first course. In forming the third course, there is placed a like vertical brick at the like distance of two feet from the vertical brick built in the second course. And in forming the fourth course, there is placed a like vertical brick immediately above each vertical brick situate in the first course. And, against the side of each of these columns, as they ascend, there is placed other vertical bricks, the middle of one brick being opposite to the end of the other. This process is continued to the top of the wall. Or these vertical bricks may be placed with their edge towards the end of the wall. Or this improvement may be obtained by placing the vertical bricks in a transverse direction, changing to the right and left alternately, to the top of the wall; regard being had, that in building a wall up a hill, the vertical bricks continue pointing upwards, without changing their course. Double calcined bricks are advantageously applied as vertical bricks. The horizontal courses may be formed in any usual bond or method, due care being taken that the vertical bricks are firmly fixed with mortar. It is here necessary to explain, that, although the distances between the vertical bricks are expressly stated above, yet various deviations or alterations may be made therein, and also in the figure or inclination of the vertical bricks, as circumstances may appear to require; and that, in proportion to the increase or reduction of the pressure, the distance between the vertical bricks may be decreased or increased; which may be extended to the forming of each column with a single row of vertical bricks, or even to the placing of the like vertical bricks apart from each other. These processes are equally applicable, where stones or other hard substances are placed vertically. *Monthly Magazine.*

Specification of the Patent granted to George Dollond, of Saint Paul's Church-yard, in the City of London, Optician; for an improved Method of lighting the Compass, commonly called the Binnacle Compass, used for steering Ships at Sea; and for other Improvements relating to Ships Binnacles. Dated February 19th, 1812.

To all to whom these presents shall come, &c. Now know ye, that in compliance with the said proviso, I the said George Dollond do hereby declare that my said invention is described in manner following; that is to say: It illuminates the compass by prismatic reflection; it applies a lens between the eye of the steersman and the compass, by which the compass is magnified; it adds springs, &c. to the compass. First, there is a lantern composed of metal, to which is applied a prism: this lantern contains a lamp of the usual construction, and the prism reflects the light upon the face of the compass: the form and position of the lantern and prism can be varied as circumstances may require. Secondly, the lens that magnifies the compass must be of such focal length as not to confine the steersman to a fixed distance. Thirdly, the card of the compass is so constructed as to prevent the vibrations: this is obtained by a bar, or false needle, placed at right angles to the needle. The point on which the card traverses is supported by two cylinders, in the interior of which is a spiral spring, for the purpose of preserving the point and securing the card in its place during any violent motion of the ship; and at each axis of the gimbals is a spiral spring; the use of these springs is to relieve the compass when the ship is greatly agitated.

Observations by the Patentee.

To a maritime country, the security and facility with which every department relating to the navigating of ships is executed becomes a subject worthy of public attention.

The advantages of the binnacle now presented to the public consists in the steadiness and equality of the light, which in the night is obtained by prismatic reflection. The facility and security with which the lantern may be removed to an inclosed place to be trimmed, (for which there is seldom a necessity, it having been proved that the lamp will burn without trimming from twelve to fifteen hours). The lamp being inclosed in a lantern prevents the possibility of the light being